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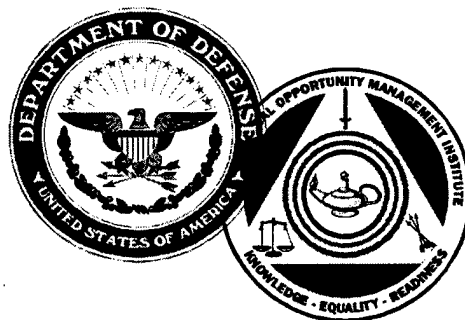
## **Improving Return Rates On Equal Opportunity Surveys**

by

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**Summer 2002**

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# **Improving Return Rates on Equal Opportunity Surveys**

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## **Abstract**

Return rates for both civilian and military surveys have been declining for the last several years. The present report examines possible causes and solutions to this problem for military equal opportunity surveys. A review of the civilian and military literature shows that several factors influence return rate: multiple contacts (including pre-notification and follow-ups), a user-friendly salient survey, postage, incentives, and survey length. This report recommends that the military might increase the return rates of equal opportunity surveys by making greater use of Web-based surveys, using multiple contacts, shortening their surveys, considering unique incentives, and considering more localized surveys.

**Summer 2002**

**Opinions expressed in this report are those of the author and should not be construed to represent the official position of DEOMI, the military Services, or the Department of Defense.**

## **Improving Return Rates on Equal Opportunity Surveys**

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Surveys are the most popular method for researching human behavior in organizations (Church, 2001). Most of what we know about equal opportunity (EO) perceptions, climates, and behaviors has been gleaned from EO surveys (Knouse & Dansby, 2000). On the positive side, surveys provide standardized formats that allow statistical analyses of responses according to demographic data, such as gender, race, ethnicity, and age. Surveys are the most cost effective method of research; i.e., the cost per respondent is lower than that for natural observation and experimentation with all their equipment and manpower needs. Most importantly, surveys allow for the possibility of a large number of respondents (Church & Wacławski, 2001; Rosenfeld, Edwards, & Thomas, 1993).

The major negative point of surveys is that return rates, defined as the number of usable surveys returned divided by the total sample originally receiving the survey (Edwards, Thomas, Rosenfeld, & Booth-Kewley, 1997), tend to be low. As a traditional rule of thumb, a response rate of over 50% is considered theoretically adequate, while above 60% is good (Babbie, 1973). In reality, the rates tend to be lower. In the civilian world, overall survey return rates range from 10% to 50% (Dillman, 2000). Meta-analyses of research studies of return rates show average rates of 46% to 49% (Church, 1993; Heberlein & Baumgartner, 1978), which according to Babbie is just at the adequate threshold. More specifically, mail surveys of corporations tend to produce return rates of 20-30% (Henderson, 1990). A study of the leading journals in management and the behavioral sciences over a period of more than 30 years showed an average return rate of 55.6% with a standard deviation of 19.7, median of 60% and mode of 45% for questionnaire-based research of organizations. Very significantly, the return rate declined over time (Baruch, 1999). Indeed, return rates in all classes of surveys have decreased over time (Krosnick, 1999), including e-mail surveys (Sheehan, 2001). In addition, a study of Web-based electronic surveys showed a return rate of 39.6% - lower than averages for paper and pencil questionnaires (Cook, Heath, & Thompson, 2000). In sum, the real return rates are not impressive.

Today surveyors face a basic dilemma. On the one hand, organizations are increasingly establishing goals of high return rates, such as 80%, in order to justify the time and cost of surveying. On the other hand, institutional research review boards are emphasizing the voluntary nature of surveys; respondents do not have to answer, if they do not wish to do so, which can translate into many incomplete surveys and significantly lower return rates (Dillman, 2000).

The military tends to have higher return rates, ranging from 30% to 70%, although the rates tend to be decreasing for a variety of reasons (Rosenfeld, Newell, Harris, & Hindelang, 2002), as we shall see. Focusing upon military equal opportunity (EO) surveys, several recent studies show a range of return rates from 41% to 76% (see Table 1). The average return rate for the surveys described in Table 1 is 53% (with a standard deviation of 11.72). This is respectable but could be better, particularly considering the large variability in rates and a historically higher rate of return (Rosenfeld et al., 2002).

The present report examines survey return rates and how they can be improved. First, I present a review of the civilian literature on surveying. Then, I look at survey administration in the military. From these reviews, I present a number of recommendations for improving the return rate of EO surveys.

<b>Table 1</b> <b>Return Rates of Recent Military Equal Opportunity Surveys</b>						
Source	Survey	No. Items	Purpose	Time Period	Sample Size	Return Rate
MEOCS Service Report	MEOCS	124	Evaluate EO climate	Apr01-May02	482,264 US military	40%
Stewart (2000)	Armed Forces EO Survey	81	Evaluate EO perceptions	Sep96-Feb97	76,754 US military	53%
Davis & Perron (2001)	Mixed Gender Opinion Quest.	19	Evaluate women's issues	May97	2,460 Canadian Forces	62%
Estrada et al. (2001)	Sexual Experience Quest.	23	Evaluate sexual harassment incidents	Mar-Apr99	424 Swedish female officers/cadets	76%
Barnes (2001)	MEOCS Evaluation Survey	14	User evaluation of MEOCS	May96-Apr97	375 commanders	41%
					375 administrators	37%
Dansby (1998a)	SLEOCS	101	Evaluate EO climate	Mar95-Nov97	1,947 flag officers	66%
Dansby (1998b)	MEOCS-LITE	94	Evaluate EO climate	1996	8,800 Air Force military	45%
Edwards (1998)	Sexual Harassment Surveys Form A Form B		Evaluate sexual harassment incidents A: old survey B: new survey	1995	DoD active duty	
		56 132			A: 30,239 B: 49,752	46% 58%
Johnson (1996)	Supervisor Evaluation of Graduates	20	Evaluate DEOMI graduates	1994-1995	111 graduates' supervisors	57%

## Review of the Civilian Literature on Survey Return Rates

There are a large number of studies in the civilian literature highlighting factors influencing survey return rates and how to increase these rates.

### *Length*

One of the factors examined extensively is the length of the survey itself. Overall, long surveys tend to produce lower response rates (Edwards & Thomas, 1993). The concept of length, however, is more complex than simply item or page counts. Shortening already short surveys does not improve the return rate. Similarly, cramming more questions into a fewer number of pages does not work, nor does shrinking font size (Dillman, 2000). The key point appears to be to create a long enough survey that the respondents understand the questions and have sufficient space to respond, while at the same time make it short enough that the respondents do not feel imposed upon.

A corollary problem to return rate is response rate; i.e., how many of the items in a survey do respondents complete. Length is also a factor here. In a recent study of Federal government employees, Church (2001) found that longer surveys (150 and 129 items) had a significantly higher skip rate (more items unanswered) than a shorter survey of 58 items. Church speculates that a fatigue factor was present; respondents simply got tired of answering items in the longer surveys.

### *Questionnaire Format*

Generally, surveys incorporate a multiple choice or combination multiple choice and open-ended question format (Dillman, 2000). Surveys composed almost entirely of open-ended questions, however, tend to exhibit low return rates (22%) (Falik & Carroll, 1971), although new data show that open-ended questions do not exert as negative an impact as once thought (Krosnick, 1999). Questions of a sensitive nature, particularly about finances, tend to decrease return rate, unless guarantees of anonymity are given, which can improve the return rate up to nine percentage points (Mitchell, 1998).

With the increase in computer usage, more computer-based surveys are being administered. The first type was e-mail surveys in the mid-1980s that are now dramatically decreasing in frequency. Apparently, Web-based surveys with more flexibility and more options are replacing e-mailed surveys. In addition, different e-mail software varies widely in what can be presented on the computer screen. Thus, e-mail offers fewer options than Web-based surveys for potentially increasing return rate through attracting the attention of the computer user. These factors include variables that may enhance the look of the survey like color, response formatting, and imaging (Sheehan, 2001).

### *Pre-notification*

Some type of pre-notification, such as a letter or e-mail, can let the individual know that an important survey is coming. Psychologically, this can build anticipation in the individual

(Dillman, 2000). A review of the response rate literature estimated that pre-notification by phone increases return rate 16%, by letter 6%, and by postcard 2.5% (Haggett & Mitchell, 1994). In addition, pre-notification increases response speed in both mail surveys and e-mail surveys (Sheehan, 2001).

One promising area of pre-notification is by e-mail, which can reach a large sample quickly. The problem is that individuals are being inundated with unsolicited e-mail messages, which may lead people to ignore e-mail survey pre-notifications (Sheehan, 2001).

### *Follow-Ups*

Follow-ups in the form of a second survey mailed or a phone or postcard follow-up can increase return rates. In a meta-analysis of survey studies, Heberlein & Baumgartner (1978) found that a follow-up increased average return rates from 46% to 68% -- a sizeable increase. One review of the literature estimated a 7% increase for a postcard follow-up, 16% for a letter follow-up, and 21% for a letter accompanied by a copy of the survey (Mitchell, 1998). Certified mail follow-ups have increased rates by up to 30%. The problem is that unless the respondent is present, he or she must go to a post office to sign for the certified letter, which may increase irritation on the part of the respondent to the point of refusing to complete the survey (Dillman, 2000).

In the relatively new area of Web-based electronic surveys, some assert that follow-up notices can double response rates (Kittleson, 1995). With e-mail surveys, the response rate can increase 25% (Sheehan, 2001). The problem is that these contacts are typically in the form of e-mail messages. The potential exists for a large number of e-mail contacts that can be directly transmitted. The respondent, however, can easily become overwhelmed by this large number of reminders. A review of Web-based surveys showed that as the number of follow-ups increased, return rates actually decreased (Cook et al., 2000).

### *Incentives*

Incentives are among the most effective devices for increasing return rates (Mitchell, 1998). Theoretically, including something of value in the survey package, like money or coupons or even a decal, creates a psychological obligation in the respondent, which should lead to reciprocation by the respondent (Arzheimer & Klein, 1999). In essence, the respondent perceives that the surveyor has entrusted an item of value to the respondent in the survey package before the survey is even returned. Therefore, the respondent feels obligated to reciprocate by completing and returning the survey.

In a meta-analysis of survey research, Church (1993) found that the return rate for surveys without incentives was 28%, which was increased 19 % when financial incentives were included in the survey package. Similarly, a meta-analysis by Yammarino, Skinner, & Childers (1991) showed up to a 25% increase with various types of incentives. Typically, financial incentives occur in the form of one-dollar bills, although sometimes-higher denominations are used. Coins occur occasionally, but are difficult to handle in survey packages. Checks for one dollar are deemed by many respondents as too much trouble to cash (Dillman, 2000).



The Church (1993) meta-analysis also found that nonfinancial material incentives increased return rates 8%. Ballpoint pens are a typical type of material incentive; although it may be that the unique packaging used to encase a ballpoint pen is what attracts the respondent rather than the pen itself (Dillman, 2000). Lottery tickets are gaining frequency as another incentive. The evidence of their effectiveness is marginal, however (Dillman, 2000). On the other hand, phone cards are gaining prominence as incentives, because they are perceived as both financial and material incentives. In a German study, a six Deutsch mark phone card (about \$3.60 U.S.) raised return rates 12% or the equivalent of using a U.S. \$5 bill (Arzheimer & Klein, 1999).

Incentives promised after returning the survey are not effective. Apparently the respondent does not believe they will come, or they prefer to see the incentive up front when they open the survey package (Dillman, 2000). In addition, frequent organizational surveys may decrease the value of incentives. Employees may feel that each subsequent survey should have a larger incentive to make it worth their time (Edwards et al., 1997).

Promising to send the respondent a summary of the survey results also does not increase response rate. A possible reason is that respondents may believe that their anonymity would be compromised by sending their address in order to receive the results (Mitchell, 1998).

Interestingly, the use of incentives with Web-based surveys tends to decrease the return rate. Some speculate that many Web surveys are too long or require so much effort to complete that respondents expect substantial incentives for working through the Web-based survey (Cook et al., 2000). One promising area in Web-based incentives is the accumulation of points for completing surveys that may be exchanged for merchandise at other Web sites (Sheehan, 2001).

### *Postage*

A meta-analysis of type of postage affixed to the survey package and return envelope found that first-class stamps were significantly better than bulk and business postage (Armstrong & Lusk, 1987). One explanation is that real stamps, particularly commemorative stamps in several colors, are more apt to catch the eye of the individual than bulk postage (Dillman, 2000), which may make the survey package look like junk mail. Once the stamp has caught the individual's eye, he or she may be more apt to complete the survey, because they believe that investing in more expensive first-class postage means that the survey is important enough to justify that cost.

### *Sponsorship*

There is some evidence that type of sponsorship of the survey may make a difference. One study showed that subjects were more apt to open a survey introduced in the cover letter with official government sponsorship (U.S. Census Bureau) than a mass marketing sponsorship approach (Dillman, Jenkins, Martin, & DeMaio, 1996). University sponsorship can increase return rate even more than government sponsorship (Mitchell, 1998). On the other hand, a meta-analysis showed that overall sponsorship did not significantly affect return rates (Yammarino et al., 1991). Moreover, a plea to help the sponsor combined with incentives for completing the survey actually tends to decrease the return rate (Mitchell, 1998).

### *Survey Salience*

Survey salience involves how well the survey deals with issues that are relevant and meaningful to respondents (Edwards et al., 1997). In a review of the survey return literature Heberlein and Baumgartner (1978) found an incredible 77% return rate for salient surveys compared to a 42% rate for nonsalient surveys. They believe that survey salience is the strongest factor in return rates. Nonsalient surveys may be viewed by respondents as a waste of time or may reflect a lack of enthusiasm for the value of social science surveying. The respondent may ask how the survey benefits him or her directly (Baruch, 1999). The pre-notification letter or survey cover letter can present the purpose of the survey in terms of its importance to the respondent (Fowler, 1993).

Edwards et al. (1997) recommend increasing survey salience by adding items of specific interest to respondents and placing at least a few of these items toward the front of the survey to generate interest as respondents begin the survey. Dillman (2000) recommends adding items asking about current behaviors and interests to increase salience. Of course, there can be a mitigating effect with survey length. Adding too many items to increase salience may also increase survey length, which may partially cancel out the salience advantage.

### *Personalization*

With the advent of computer word processing and high-speed printers, cover letters can be highly personalized by including the respondent's name and address and embedding personal information in the cover letter. Research, however, shows mixed results. Some studies find that such personalization heightens the perceived salience of the survey, while others believe that personalization may cause respondents to question whether the survey is truly anonymous and whether confidentiality of their responses will truly be secure (Dillman, 2000; Mitchell, 1998; Edwards et al., 1997).

### *Survey Features that Do Not Increase Return Rate*

An obvious variable that would seem intuitively to work because it would attract the reader's attention is color of the survey. Reviews of the literature uniformly find that color has no effect (Dillman, 2000; Mitchell, 1998). Another variable that would seem to be effective is prescribing deadlines by which the surveys must be returned. Again reviews of the literature find no effect (Mitchell, 1998; Edwards et al., 1997).

### *Demographic Influences*

Several respondent background variables may affect survey return rate.

*Age.* Choice of survey format may relate to survey return rates, and age may be a strong factor in this choice. The argument here is that respondents are more apt to return those surveys possessing formats that they prefer to use in completing the survey. Younger respondents tend to choose Web-based survey formats over more traditional forms, such as paper and pencil, which are preferred by older respondents. This finding tends to cut across education level. Younger

doctors preferred the Web-based format, while older doctors preferred the more traditional approaches (Church, 2001). Moreover, individuals with higher computer anxiety, such as older respondents, produced lower quality answers (more errors, less apt to finish the survey, lower cognitive performance) (Booth-Kewley, Rosenfeld, & Edwards, 1993).

*Gender.* In the area of choice of survey format, there were no differences between males and females in choosing Web-based or more traditional survey techniques (Church, 2001). In an all-female sample, women initially returned the survey at a rate of 58%, while a follow-up phone message increased the rate to 66% (Brennan & Hoek, 1992).

*Education Level.* In general, respondents with higher education levels (college degree and higher) return surveys at a higher rate than less educated respondents. This can introduce a strong response bias into the survey data. The findings may be skewed in favor of the responses of the more highly educated and literate members of the organization (Edwards et al., 1997).

*Personality.* Although the personality of respondents and nonrespondents has not been extensively studied, there are some findings about the type of person who responds to survey requests. He or she tends to reciprocate, to follow commitments, to follow the lead of others similar to himself or herself, to follow suggestions of authority figures, to seize unique opportunities, and to favor others he or she likes (Groves, Cialdini, & Couper, 1992). Moreover, respondents are more likely to believe that it is their social responsibility to complete surveys, that they can influence public policy, and that they are generally happy with their lives. Conversely, nonrespondents tend to live in large cities and work long hours (Krosnick, 1999).

*Culture.* Culture as well as country of residence may influence which survey format respondents choose. In a multinational surveying effort, Americans preferred Web-based and automated phone techniques, while South Americans, Europeans, Africans, and Asians preferred more traditional survey methods. This finding was due in part to the lower quality phone and computer connections in several countries (Church, 2001).

In addition, respondents from different cultures may be less apt to respond to surveys, which violate cultural norms, such as describing personal information, or evaluations, which tend to pit colleagues against one another (Church, 2001). Indeed, a meta-analysis of multinational survey return rates showed that American-style surveys had low return rates with high variability (high standard deviation) in non-Western countries (Baruch, 1999). The author cautions that the small number of studies in this meta-analysis sample makes the conclusions tentative.

*Type of Employee.* In a study of organizational research surveys, type of employee influenced return rate. Managers returned surveys the most (62%) closely followed by employees (61%) and professionals (59%). Top managers including chief executive officers (CEOs) had the worst return rates (36%) (Baruch, 1999). In the area of academics, physical scientists had the worst return rates (30%), while social scientists have the highest rates (63%) (Mitchell, 1998). One explanation is that social scientists are very familiar with surveying since they use it as a primary research device, while physical scientists see surveying as "soft" science whose data are too qualitative.

### *The Questionable Validity of Very High Returns*

The prevailing wisdom has been to maximize return rates toward goals of 70% or even greater (Dillman, 2000). New evidence, however, shows that very high rates are not necessarily accurate. Indeed, reporting rates of 90% and above should arouse suspicion and should be explained in the study (Baruch, 1999).

An interesting study of voters showed that a mail survey with a 20% return rate predicted election outcomes better than a phone survey with a 60% response rate. One explanation is that the phone survey did several follow-ups to achieve its higher return rate. In doing so, the researchers increasingly added respondents who were generally non-participants. Not only did the subjects not respond to the survey the first time around, but also they did not vote, and thus were less aware of the election issues (Krosnick, 1999). Therefore, adding these non-participants to the respondent pool through successive follow-ups actually diluted the quality of the survey data.

This problem of reluctant respondents can also arise with administered surveys, where the surveyor distributes the survey to a group, is present while they complete it, and then collects the surveys. Theoretically, this is a 100% return rate, but in reality a percentage of respondents probably would not have answered the survey, if they really had a choice; e.g., it had been mailed to them. By involuntarily forcing these reluctant individuals to complete the survey, the data may be skewed by these respondents purposefully distorting their answers (Baruch, 1999).

### *Theoretical Explanation of Survey Return Rates*

There are two basic theoretical approaches explaining survey return rates. One examines the theoretical reasons that some variables tend to increase return rates; i.e., ways to increase response. The other theoretical perspective looks at why individuals do not complete surveys; i.e., it explains nonresponse behavior.

#### *Social Exchange Theory*

Social exchange theory can explain several of the factors indicated above that affect return rate (Dillman, 2000; Martin, Duncan, Powers, & Sawyer, 1989). Basically, exchange theory posits that individuals tend to do things that maximize the rewards and minimize the costs in a transaction. In the survey situation, anything that maximizes the rewards to the individual, like discovering new information from a salient survey or even finding an incentive in the package, should motivate the individual to complete the survey and return it.

Conversely, anything that increases the cost to the individual may decrease the desire to complete the survey. Thus, longer surveys may be perceived as too arduous (too high a cost) to complete, and certified mail follow-ups may require too much effort to track down. In addition, respondents may perceive hard to read items and difficult to answer questions as costs in terms of time and effort (Fowler, 1993).

### *Naval Equal Opportunity/Sexual Harassment Survey (NEOSH) of Nonresponse*

Perhaps the most comprehensive study of response rate in EO surveys was recently completed by the Navy (Rosenfeld et al., 2002). From 1989 to 1999 the response rate on the Navy Equal Opportunity/Sexual Harassment Survey (NEOSH) had dropped from 60% to 30% - a sizeable decrease. Similarly, the Navy Personnel Survey (NPS), from the period 1990 to 2000 dropped from 52% to 33%. These trends led the Navy to devise a study to examine factors that might increase falling return rates.

A sub sample of the 1999 NEOSH sample was contacted by phone to participate in a mail survey and phone survey. The incentive was a \$5 phone card. The return rate of this mail survey was 39%. The results showed that contrary to the prevailing opinion that individuals today receive too many surveys (Baruch, 1999), enlisted personnel and officers did not think they were over-surveyed. The mean number of surveys these Naval personnel received for the previous 12 months was only two. In addition, a pair of factors was identified as most likely to depress return rate: belief that surveys had no impact on Navy policy and survey length. The study also recommended that the Navy provide survey feedback to respondents, which in part would show the importance (salience) of the surveys, involve commands in surveys to show their importance, shorten surveys (they recommended about 8 pages), make surveys more interesting by surveying current "hot" topics like religious discrimination and the impact of 9/11 on EO, and finally allow incentives in military surveys.

#### *Length*

One of the strongest findings of the NEOSH nonresponse study was that respondents thought the survey was too long (Rosenfeld et al., 2002). There are other indicators as well that EO surveys are too lengthy. Turning back to Table 1 of this report, the reader can see that as length of EO surveys increases, return rate tends to drop. In fact, focusing upon the eight standardized EO surveys in Table 1 (MEOCS, Armed Forces EO Survey, Mixed Gender Opinion Questionnaire, Sexual Experiences Questionnaire, SLEOCS, MEOCS-LITE, and DoD Sexual Harassment Survey Forms A and B), number of items in the survey correlates negatively with return rate (-0.50). While this finding is not statistically significant for the small number of surveys sampled ( $df=6$ ), it does show that EO survey length and return rate are related.

Researchers are currently looking into ways of shortening EO surveys. For example, item response theory was used to shorten the Sexual Experiences Questionnaire from 23 to 16 items - a 31% reduction without loss of psychometric power. Item response theory allows deletion of survey items that contribute less to survey scales while still retaining informational content and high precision measurement in the remaining items (Stark, Chernyshenko, Lancaster, Drasgow, & Fitzgerald, 2002). Similarly, efforts to reduce the size of the various versions of the MEOCS using item response theory are ongoing (e.g., Truhon, 2000).

#### *Survey Salience*

The civilian literature has indicated that survey salience - its importance to and impact upon the individual - is a factor in the individual's choice to respond to the survey (Dillman,

### *Survey Nonresponse Theory*

Nonresponse theory examines organizational factors that affect survey completion by individuals (Tomaskovic-Devey, Leiter, & Thompson, 1994). According to this theory, there are three basic factors that influence nonresponse: authority to respond (i.e., the individual has formal or informal authority to respond to a survey request), capacity to respond (the individual has access to the right information), and motivation to respond (individual and organization-based motives to respond).

In addition, several organizational variables affect these three factors. Size is one variable. As organizations increase in size, complexity increases. Authority to respond then depends upon the hierarchy and decision-making structure of the organization. Division of labor in larger organizations compartmentalizes information, and thus reduces capacity to respond. Large organizational hierarchies also fragment motivation to respond among loyalties to the organization, division, and department.

An organization with more than 1,000 members tends to have a 12% lower response rate than smaller organizations with 10 to 25 members. The larger organizations have more detached employees, who do not identify readily with organizational goals that may be reflected in organizational surveys. On the other hand, members of small organizations may have more direct access to information and be more highly committed to organizational goals in surveying (be more motivated).

Another variable is degree of decision-making centralization. Highly centralized organizations where most important decisions are made at the top will have individuals who are not authorized to respond and have little information nor inclination (motivation) to respond.

Still another variable is interaction with the environment. Organizations, like service organizations, that actively interact with their environment, particularly clients, will have more access to information (greater capacity to respond) as well as a stronger motivation to respond to outside surveys. On the other hand, organizations insulated from their environments, like large bureaucracies, may have neither the capacity, nor motivation, to respond to outside surveys.

There are several parallels here to military organizations. Military organizations tend to be large, bureaucratic, centralized in terms of decision-making, and fragmented as to individual access to organizational information. Therefore, according to nonresponse theory, we would predict lower response rates, particularly in larger, highly centralized military units, which we tend to see in unit surveys, such as the Military Equal Opportunity Climate Survey (MEOCS) in Table 1 (Landis, Dansby, & Faley, 1993).

### *Review of the Military Literature on Survey Return Rates*

While the military literature on return rates is not as extensive as the civilian literature, several findings stand out.

2000; Edwards et al., 1997). The Navy return rate survey described above, showed that salience can be increased by involving commands more and surveying topics important to respondents (Rosenfeld et al., 2002).

Salience can also be increased by emphasizing the importance of respondent involvement in the survey to the organization (Edwards et al., 1997). A personal military anecdote illustrates this concept. When we were administering military surveys at the Air Force Human Resources Laboratory in the early 1970s, we were searching for means of increasing the return rates of surveys we were sending to Air Force personnel. One day I discovered an ink stamp with the imprint "For Your Eyes Only". We decided to experiment and stamp the next batch of outgoing surveys with that phrase. To our amazement, the return rate on that batch was over 90%. Evidently, this stamp had dramatically increased the importance of the survey in the eyes of potential respondents.

### *Demographics*

*Gender.* Navy women are more apt to return surveys than Navy men (Thomas & Thomas, 1993). One important factor appears to be the content of the survey – a primary factor in survey salience (Dillman, 2000). Questionnaires, which evaluate areas important to women, such as sexual harassment, tend to have high return rates. Culbertson and Rosenfeld (1993) offer a number of ideas for improving a military sexual harassment survey, and thus improving return rates: design the survey with the using organization in mind, include a definition of sexual harassment, assess the sexual harassment climate of the organization, ask about types and frequencies of harassing behaviors, and assess consequences to the individuals and the organization.

*Pay Grade.* Higher ranking Navy noncommissioned officers (NCOs) and Navy officers tend to have high return rates, at times exceeding 70%, while lower ranking Navy enlisted personnel (e.g., E2s) have low rates of response. These low rates of response occur for both male and female sailors (Thomas & Thomas, 1993).

### Summary of Factors Increasing Survey Return Rates

A number of meta-analyses, as well as specific studies of survey return rates, propose several ways to increase return rates.

#### *1. Multiple Contacts*

The single most important factor in increasing response rates is multiple contacts with the respondents (Edwards et al., 1997). A pre-notification can create expectation in the respondents of an important survey to follow (Dillman, 2000). Most importantly, follow-ups do increase return rates. The format of the follow-up (letter, phone, or e-mail) is less important than the attempt to contact the unresponsive individual (Edwards et al., 1997). Survey practitioners recommend a multi-contact system: pre-notification letter, the questionnaire, a thank-you postcard a week to 10 days later, a replacement questionnaire two to four weeks later, and a final contact by phone or FedEx two to four weeks after that (Dillman, 2000; Fowler, 1993). Research shows, however, that multiple follow-ups

by e-mail on Web-based surveys can actually decrease return rate by overwhelming the individual (Cook et al., 2000).

## *2. User-Friendly Salient Survey*

In terms of social exchange theory, anything that can increase the rewards and decrease the costs of completing the survey will increase the return rate (Dillman, 2000). A user-friendly survey emphasizes simple language, well-defined terms, and other devices for easing its completion. Moreover, subjects are more apt to complete a survey they find as salient (important to themselves) (Dillman, 2000; Edwards et al., 1997). For example, women may be more apt to complete a survey on unique women's issues, because many have experience with these problems (Thomas & Thomas, 1993). Respondents in general are more apt to complete surveys that cover information important to them (Rosenfeld et al., 2002).

## *3. First-class Postage*

First-class postage, especially specialized stamps like commemorative issues with multiple colors, may attract the attention of respondents as they open the package (Armstrong & Lusk, 1987). They may believe that costlier first-class postage indicates the importance of the survey.

## *4. Incentives*

Again, according to exchange theory, incentives in the survey package may indicate increased rewards to the respondent (Dillman, 2000). While cash significantly increases return rates, other material incentives, such as coupons, stickers, small gifts, prizes, and phone cards can be effective (Arzheimer & Klein, 1999; Church, 1993; Rosenfeld et al., 2002).

## *5. Shorter Survey*

Longer surveys decrease return rates. The question then becomes where is the point at which surveys become too long. The arbitrary number appears to be four pages and about 50 items (Church, 2001; Edwards et al., 1997). Surveys less than four pages and 50 items have higher return rates. It is important to note, however, that short surveys that have fonts that are too small, have abbreviated questions, and use undefined terms in order to conserve space, may generate lower return rates (Dillman, 2000). The essential point is to balance survey length and understandability of the survey.

## *6. Organizational Factors*

Nonresponse theory predicts higher return rates from individuals who work in smaller, less bureaucratic, organizations with decentralized decision making and direct access to relevant information required to answer survey questions (Tomaskovic-Devey et al., 1994).



## Recommendations for Increasing Return Rates in Military EO Surveys

Based upon the above discussion, several recommendations for increasing the return rate of military EO surveys follow.

### 1. *Consider greater use of Web-based surveys*

The military by its very nature is a young population. NCOs must retire in their 30's and 40's, and officers must retire in their 40's and 50's. Evidence shows that younger populations prefer Web-based information exchange, including Web-based surveys (Cook et al., 2000).

### 2. *Use multiple contacts of respondents*

Multiple contacts in the form of pre-notifications and follow-ups are the strongest factor in increasing return rates (Edwards et al., 1997). With Web-based surveys, this becomes relatively easy through e-mail. It should be cautioned, however, that excessive e-mail contacts could backfire by overwhelming the individual and actually decreasing return rates (Cook et al., 2000).

### 3. *Shorten surveys*

Historically, EO surveys have been long. The basic MEOCS, for example, has 124 items, and its return rate is low. A more optimal size would appear to be about half that size – about 60 items (Rosenfeld et al., 2002). Current attempts to convert the MEOCS into shorter and more specialized modules would seem to be a step in the right direction (e.g., Kustra, 2002; Truhon, 2000).

### 4. *Consider unique incentives*

Traditionally military surveyors assumed that military members would respond through a sense of duty. Given the number and availability of surveys these days, military members are becoming more selective about which surveys they are choosing to respond to. Exchange theory would posit that increasing rewards would increase participation (Dillman, 2000). Unique incentives, such as phone cards (Arzheimer & Klein, 1999; Rosenfeld et al., 2002), may be particularly attractive to military members who may be stationed far from friends and loved ones and desire to communicate with them. In addition, points that can be traded for desired goods and merchandise (Sheehan, 2001) may be an attractive means of increasing return rates of Web-based surveys.

### 5. *Consider more localized surveys*

Nonresponse theory posits that very large bureaucratic organizations (in this case the military) tend to produce lower response rates (Tomaskovic-Devey et al., 1994). Large bureaucratic organizations tend to put hurdles in the way of responding in terms of greater difficulty accessing information, rules restricting types of response, and less

commitment on the part of individuals that translates into lower survey participation. Therefore, the military should consider more localized EO surveys at least at the service or major command level, where a greater degree of commitment may attach to the organization. This may have particular ramifications for the MEOCS, which has traditionally been administered as one survey through differing types of military units (Landis et al., 1993). One option may involve eliminating the MEOCS as a monolithic, DoD-level survey instrument and replacing it with several versions that are more service and major command specific.

### Conclusions

Most of what we know about the effects of diversity and about equal opportunity we have learned through EO surveys. Therefore, effective survey administration, including enhanced survey return rates, is critical for ensuring high quality data upon which important policy decisions will be made. The civilian and military reviews of the literature reveal that several factors can increase equal opportunity survey return rates; greater use of Web-based electronic surveys, multiple contacts, including follow-ups, shorter surveys, creative incentives for returning surveys, and more localized surveys.

## References

- Armstrong, J. S., & Lusk, E. J. (1987). Return postage in mail surveys: A meta-analysis. *Public Opinion Quarterly*, 51, 233-248.
- Arzheimer, K., & Klein, M. (1999). The effect of material incentives on return rate, panel attrition and sample composition of a mail panel survey. *International Journal of Public Opinion Research*, 11, 368-377.
- Babbie, E. (1973). *Survey research methods*. Belmont, CA: Wadsworth.
- Barns, R. D. (2001). Evaluating the Military Equal Opportunity Climate Survey: A survey of unit commanders and MEOCS administrators. In D. McKay (Ed.), *Proceedings 3<sup>rd</sup> Biennial EO/EEO Research Symposium* (pp. 262-289), Cocoa Beach, FL, December 8-10, 1999. DEOMI RSP 01-1. Patrick AFB, FL: Defense Equal Opportunity Management Institute.
- Baruch, Y. (1999). Response rate in academic studies: A comparative analysis. *Human Relations*, 52, 421-438.
- Booth-Kewley, S., Rosenfeld, P., & Edwards, J. E. (1993). Computer-administered surveys in organizational settings. In P. Rosenfeld, J. E. Edwards, & M. D. Thomas (Eds.), *Improving organizational surveys* (pp. 73-101). Newbury Park, CA: Sage.
- Brennan, M., & Hoek, J. (1992). The behavior of respondents, nonrespondents, and refusers across mail surveys. *Public Opinion Quarterly*, 56, 530-535.
- Church, A. H. (1993). Estimating the effect of incentives on mail survey response rates: A meta-analysis. *Public Opinion Quarterly*, 57, 62-79.
- Church, A. H. (2001). Is there a method to our madness? The impact of data collection methodology on organizational survey results. *Personnel Psychology*, 54, 937-969.
- Church, A. H., & Wacławski, J. (2001). *Designing and using organizational surveys*. San Francisco: Jossey-Bass.
- Cook, C., Heath, F., & Thompson, R. L. (2000). A meta-analysis of response rates in Web- or Internet-based surveys. *Educational and Psychological Measurement*, 60, 821-836.
- Culbertson, A. L., & Rosenfeld, P. (1993). Understanding sexual harassment through organizational surveys. In P. Rosenfeld, J. E. Edwards, & M. D. Thomas (Eds.), *Improving organizational surveys* (pp. 164-187). Newbury Park, CA: Sage.

- Dansby, M. R. (1998a). The Senior Leader Equal Opportunity Climate Survey: An update on what the bosses believe. In M. R. Dansby (Ed.), *Proceedings 2<sup>nd</sup> Biennial EO/EEO Research Symposium* (pp. 49-53). Cocoa Beach, FL, December 2-4, 1997. DEOMI RSP 98-4. Patrick AFB, FL: Defense Equal Opportunity Management Institute.
- Dansby, M. R. (1998b). Air Force EO climate measurement. In M. R. Dansby (Ed.), *Proceedings 2<sup>nd</sup> Biennial EO/EEO Research Symposium* (pp. 168-169). Cocoa Beach, FL, December 2-4, 1997. DEOMI RSP 98-4. Patrick AFB, FL: Defense Equal Opportunity Management Institute.
- Davis, K. D., & Perron, N. M. (2001). Gender relations in the military Mixed Gender Opinion Questionnaire. In D. McKay (Ed.), *Proceedings 3<sup>rd</sup> Biennial EO/EEO Research Symposium* (pp. 20-28), Cocoa Beach, FL, December 8-10, 1999. DEOMI RSP 01-1. Patrick AFB, FL: Defense Equal Opportunity Management Institute.
- Dillman, J. A. (2000). *Mail and Internet surveys* (2<sup>nd</sup> Ed.). New York: Wiley.
- Dillman, J. A., Jenkins, C., Martin, B., & DeMaio, T. (1996). *Cognitive and motivational properties of three proposed decennial census forms*. (TR 96-29). Pullman, WA: Washington State University Social and Economic Sciences Research Center.
- Edwards, J. E. (1998). Opportunities for assessing military EO. In M. R. Dansby (Ed.), *Proceedings 2<sup>nd</sup> Biennial EO/EEO Research Symposium* (pp. 170-181). Cocoa Beach, FL, December 2-4, 1997. DEOMI RSP 98-4. Patrick AFB, FL: Defense Equal Opportunity Management Institute.
- Edwards, J. E., & Thomas, M. D. (1993). The organizational survey process. In P. Rosenfeld, J. E. Edwards, & M. D. Thomas (Eds.), *Improving organizational surveys* (pp. 3-28). Newbury Park, CA: Sage.
- Edwards, J. E., Thomas, M. D., Rosenfeld, P., & Booth-Kewley, S. (1997). *How to conduct organizational surveys*. Thousand Oaks, CA: Sage.
- Estrada, A. X., Berggren, A., Hitlan, R. T., & Schneider, K. T. (2001). Sexual harassment of female officers and cadets in the Swedish Armed Forces. In D. McKay (Ed.), *Proceedings 3<sup>rd</sup> Biennial EO/EEO Research Symposium* (pp. 150-158), Cocoa Beach, FL, December 8-10, 1999. DEOMI RSP 01-1. Patrick AFB, FL: Defense Equal Opportunity Management Institute.
- Falik, A., & Carol, S. (1971). Rate of return for closed versus open-ended questions in a mail questionnaire survey of industrial organizations. *Psychological Reports*, 29, 1121-1122.
- Fowler, F. J. (1993). *Survey research methods* (2<sup>nd</sup> Ed.). Newbury Park, CA: Sage.
- Groves, R. M., Cialdini, R. B., & Couper, M. P. (1992). Understanding the decision to participate in a survey. *Public Opinion Quarterly*, 56, 475-495.

- Haggett, S., & Mitchell, V. W. (1994). Effect of industrial pre-notification on response rate, speed, quality, bias and cost. *Industrial Marketing Management*, 23, 101-110.
- Heberlein, T. A., & Baumgartner, R. (1978). Factors affecting response rates to mailed questionnaires: A quantitative analysis of the published literature. *American Sociological Review*, 43, 447-462.
- Henderson, D. A. (1990). *The influence of corporate strategy, structure and technology on location of procurement and sales*. Unpublished doctoral dissertation, University of Michigan.
- Johnson, J. L. (1996). *Local effects and global impact of DEOMI training*. DEOMI RSP 96-7. Patrick AFB, FL: Defense Equal Opportunity Management Institute.
- Kittleson, M. J. (1995). An assessment of the response rate via the postal service and e-mail. *Health Values*, 18(2), 27-29.
- Knouse, S. B., & Dansby, M. R. (2000). Recent diversity research at the Defense Equal Opportunity Management Institute (DEOMI): 1992-1996. *International Journal of Intercultural Relations*, 24, 203-225.
- Krosnick, J. A. (1999). Survey research. *Annual Review of Psychology*, 50, 537-567.
- Kustra, T. (2002). MEOCS updates provide new tools for customers. *Reflections*, 15(2), 13.
- Landis, D., Dansby, M. R., & Faley, R. H. (1993). The Military Equal Opportunity Climate Survey: An example of surveying in organizations. In P. Rosenfeld, J. E. Edwards, & M. D. Thomas (Eds.), *Improving organizational surveys* (pp. 210-239). Newbury Park, CA: Sage.
- Martin, W. S., Duncan, W. J., Powers, T. L., & Sawyer, J. C. (1989). Costs and benefits of selected response inducement techniques in mail survey research. *Journal of Business Research*, 19, 67-79.
- Mitchell, V-W. (1998). Improving mail survey responses from UK academics: Some empirical findings. *Assessment and Evaluation in Higher Education*, 23, 59-70.
- Rosenfeld, P., Edwards, J. E., & Thomas, M. D. (1993). *Improving organizational surveys*. Newbury Park, CA: Sage.
- Rosenfeld, P., Newell, C. E., Harris, R., & Hindelang, R. (2002, April). Navy Equal Opportunity/Sexual Harassment Survey (NEOSH) study of survey nonresponse. Unpublished point paper. Millington, TN: Navy Personnel Research, Studies & Technology Department.

- Service Report (2002). DEOMI/DR MEOCS Status, April 1, 2001 – May 31, 2002. Prepared by SFC C. Brown.
- Sheehan, K. B. (2001). E-mail survey response rates: A review. *Journal of Computer Mediated Communication*, 6(2). [[http: www.ascusc.org/jcmc/vol6/issue2/sheehan.html](http://www.ascusc.org/jcmc/vol6/issue2/sheehan.html)]
- Stark, S., Chernyshenko, O. S., Lancaster, A. R., Drasgow, F., & Fitzgerald, L. F. (2002). Toward standardized measurement of sexual harassment: Shortening the SEQ-DoD using item response theory. *Military Psychology*, 14, 49-72.
- Stewart, J. B. (2000). *Variation in the effects of different types of racial incidents on satisfaction with military service*. DEOMI RSP 00-4. Patrick AFB, FL: Defense Equal Opportunity Management Institute.
- Thomas, M. D., & Thomas, P. J. (1993). Surveying pregnancy and single parenthood: The Navy experience. In P. Rosenfeld, J. E. Edwards, & M. D. Thomas (Eds.), *Improving organizational surveys* (pp. 145-163). Newbury Park, CA: Sage.
- Tomaskovic-Devey, D., Leiter, J., & Thompson, S. (1994). Organizational survey nonresponse. *Administrative Science Quarterly*, 39, 439-453.
- Truhon, S. (2000). *Shortening the MEOCS using item response theory*. DEOMI RSP 00-8. Patrick AFB, FL: Defense Equal Opportunity Management Institute.
- Yammarino, F. J., Skinner, S. J., & Childers, J. L. (1991). Understanding mail survey response behavior: A meta-analysis. *Public Opinion Quarterly*, 55, 613-640.